

TEMPERATURE OF THE AIR (expressed in degrees Fahrenheit).

The distribution of mean temperature over the United States and Canada for June, 1893, is exhibited on Chart II by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for mean temperature and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the temperature is below the normal and subtracting when above. The monthly mean temperature for regular stations of the Weather Bureau represents the mean of the maximum and minimum temperatures.

The highest mean temperature for June, 1893, was reported in the Colorado Desert, California, where it was above 100, and the mean values were above 90 in the Gila and lower Colorado valleys. Over the greater part of the Florida Peninsula, along the immediate Gulf coast, generally over Texas, and in extreme southern New Mexico the mean readings were above 80. The mean temperature was above 70 in the Atlantic coast states south of New Jersey, in the central valleys to central Minnesota and North Dakota, and in the central valleys of California. The lowest mean temperature for June, 1893, was noted in the mountains of Colorado, where it fell below 50, and the mean readings were below 60 on the extreme southeast and east New England coasts, on the north shore of Lake Superior, in the middle and northern Rocky Mountain regions, over the northern plateau, Washington, and Oregon, and along the immediate Pacific coast to about the 37th parallel.

DEPARTURES FROM NORMAL TEMPERATURE.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for June for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for June, 1893; (4) the departure of the current month from the normal; (5) and the extreme monthly mean for June during the period of observation and the years of occurrence:

State and station.	(1) Normal for the month of June.	(2) Length of record.	(3) Mean for June, 1893.	(4) Departure from normal.	(5) Extreme monthly mean for June.			
					Highest.	Year.	Lowest.	Year.
<i>Arizona.</i>	°	Years	°	°	°		°	
Fort Apache	71.5	21	71.4	- 0.1	78.0	1876	63.6	1884
Fort Mohave	88.8	22	87.8	- 1.0	95.3	1876	83.4	1890
Whipple Barracks	69.6	22	65.0	- 4.6	78.9	1876	62.8	1884
<i>Arkansas.</i>								
Keesees Ferry	77.2	11	73.8	- 3.4	80.2	1885	73.8	1893
<i>California.</i>								
Fort Bidwell	63.3	21	58.7	- 4.6	70.6	1871	55.4	1891
Riverside	71.0	11	70.8	- 0.2	78.1	1883	67.1	1890
<i>Colorado.</i>								
Las Animas	69.7	10	72.0	+ 2.3	72.5	1887	68.1	1884
<i>Florida.</i>								
Merritts Island	78.5	11	81.0	+ 2.5	83.4	1890	73.8	1892
<i>Georgia.</i>								
Forsyth	76.9	19	77.6	+ 0.7	81.9	1880, 1881	74.2	1884
<i>Idaho.</i>								
Boise Barracks	66.5	19	62.7	- 3.8	74.3	1871	60.0	1891
Fort Sherman	61.2	10	55.0	- 6.2	64.4	1882	55.0	1893
<i>Indiana.</i>								
Lafayette	70.5	11	71.6	+ 1.1	75.7	1890	66.2	1889
<i>Indian Territory.</i>								
Fort Supply	75.4	13	80.7	+ 5.3	80.7	1893	72.6	1891
<i>Iowa.</i>								
Cresco	66.0	20	68.2	+ 2.2	72.0	1873	62.8	1877
<i>Kansas.</i>								
Eureka Ranch	75.4	10	76.5	+ 1.1	80.0	1890	70.8	1892
Independence	74.8	21	73.9	- 0.9	79.0	1872	70.8	1889
Salina	75.3	10	.....	.....	79.3	1890	71.2	1891
<i>Louisiana.</i>								
Grand Coteau	79.6	10	79.4	- 0.2	82.0	1891	78.0	1892

Departures from normal temperature—Continued.

State and station.	(1) Normal for the month of June.	(2) Length of record.	(3) Mean for June, 1893.	(4) Departure from normal.	(5) Extreme monthly mean for June.			
					Highest.	Year.	Lowest.	Year.
<i>Maine.</i>	°	Years	°	°	°		°	
Orono	62.1	23	.....	.....	64.8	1884, 1889	57.5	1881
<i>Maryland.</i>								
Cumberland	68.8	22	70.9	+ 2.1	74.0	1874	65.3	1878
<i>Michigan.</i>								
Kalamazoo	67.4	16	70.6	+ 3.2	70.6	1893	63.7	1889
<i>Missouri.</i>								
Sedalia	74.3	11	74.6	+ 0.3	80.5	1890	71.6	1891
<i>Montana.</i>								
Fort Custer	63.8	11	63.8	0.0	66.5	1884	60.8	1891
<i>Nebraska.</i>								
Fort Robinson	66.8	8	69.2	+ 2.4	71.7	1887	62.5	1891
Genoa (near)	69.4	17	72.3	+ 2.9	72.8	1890	66.4	1878
<i>Nevada.</i>								
Brown	75.6	22	79.6	+ 4.0	83.7	1873	69.0	1882
Carson City	64.6	15	58.7	- 5.9	69.9	1876	58.7	1893
<i>New Hampshire.</i>								
Hanover	64.2	22	66.4	+ 2.2	68.8	1876	61.5	1881
<i>New Mexico.</i>								
Fort Wingate	69.6	22	.....	.....	75.2	1881	63.6	1891
<i>New York.</i>								
Cooperstown	64.1	22	66.0	+ 1.9	70.0	1876	59.0	1881
Plattsburg Barracks	64.8	22	66.3	+ 1.5	68.8	1872	60.8	1881
<i>North Carolina.</i>								
Lenoir	70.5	21	70.5	0.0	75.0	1874	63.6	1887
<i>Oklahoma.</i>								
Fort Reno	75.0	9	76.4	+ 1.4	76.9	1890	72.5	1889
Fort Sill	77.8	21	78.8	+ 1.0	83.2	1881	73.8	1889
<i>Oregon.</i>								
Bandon	56.4	9	56.0	- 0.4	59.8	1891	54.1	1887
<i>Pennsylvania.</i>								
Dyberry	64.2	20	66.0	+ 1.8	66.8	1884	60.4	1881
Grampian	66.7	22	69.0	+ 2.3	71.7	1892	61.3	1878
Wellsboro	65.6	14	63.8	- 1.8	74.6	1883	61.1	1881
<i>South Carolina.</i>								
Statesburg	76.3	12	74.6	- 1.7	80.5	1881	72.4	1884
<i>South Dakota.</i>								
Fort Sully	68.9	22	73.9	+ 5.0	76.1	1871	63.6	1877
<i>Texas.</i>								
Austin	83.2	20	78.2	- 5.0	85.9	1881	78.2	1893
Silver Falls	76.1	6	79.5	+ 3.4	79.5	1893	71.8	1889
<i>Utah.</i>								
Terrace	73.1	21	70.7	- 2.4	79.3	1878	60.8	1885
<i>Vermont.</i>								
Stratford	65.7	20	66.2	+ 0.5	71.1	1884	58.4	1881
<i>Virginia.</i>								
Dale Enterprise	72.5	13	72.7	+ 0.2	78.5	1890	68.2	1882
<i>Washington.</i>								
Fort Townsend	58.6	20	52.6	- 6.0	61.7	1888	52.6	1893
<i>West Virginia.</i>								
Parkersburg .....	.....	.....	.....	.....	.....	.....	.....	.....
<i>Wisconsin.</i>								
Embarrass	67.9	22	.....	.....	73.2	1873	63.2	1889
Madison	67.2	20	69.8	+ 2.6	72.4	1873	63.5	1889
<i>Wyoming.</i>								
Fort Washakie	62.4	9	51.1	- 1.3	68.9	1887	58.5	1892

The month was warmer than usual in the middle Atlantic and New England states, and thence over the Lake region, the Ohio, upper Mississippi, middle Missouri, and Red River of the North valleys to the middle Rocky Mountain region, and thence to the southern boundary of the United States from eastern Texas to southwestern California. In the south Atlantic and middle and east Gulf states, and from the Pacific coast over the middle and northern plateau and the northern Rocky Mountain regions the month was cooler than usual. The greatest departure above the normal temperature was noted over the eastern and northern lake regions, in the extreme upper Mississippi valley, in the valley of the Red River of the North, and at Fort Stanton, N. Mex., where the mean was 4, or more, higher than the June average. The most marked departure below the normal temperature was reported in the valley of the Columbia River, where the mean readings were 5, or more, lower than usual. Elsewhere the departures from the normal temperature were less than 2.

TEMPERATURE, JANUARY TO JUNE, 1893.

For the period January 1 to June 30, 1893, the mean temperature averaged about 4 below the normal over the northern plateau region, averaged 2 to 3 below the normal in the upper Mississippi valley, over the middle plateau region, and

on the middle and north Pacific coasts, and was 1 to 2 below the normal in the New England, middle, south Atlantic, and east Gulf states, the Ohio Valley and Tennessee, the Lake region, the Missouri Valley, on the northeast and middle-eastern slopes of the Rocky Mountains, and on the south Pacific coast. On the southeast slope of the Rocky Mountains the mean temperature was about 2 above the normal, and in the extreme northwest it was about 1 above the normal. In the west Gulf states and over the southern plateau region the mean temperature averaged about normal for the period named.

YEARS OF HIGHEST MEAN TEMPERATURE FOR JUNE.

At Northfield, Vt., Rochester, N. Y., Alpena, Marquette, and Kalamazoo, Mich., Abilene and Silver Falls, Tex., Fort Supply, Ind. T., Fort Stanton, N. Mex., Valentine, Nebr., Huron and Rapid City, S. Dak., the mean temperature for the current month was the highest reported for June during the respective periods of observation. The highest mean temperature for June was reported at points on the immediate New England and New York coasts in 1892; in the Carolinas, northern Georgia, and eastern Tennessee, and from Lower Michigan to the lower Ohio valley in 1890; from the Oregon coast over the northern plateau and the north part of the middle plateau in 1889; on the south Pacific coast in 1888; from the middle-eastern slope of the Rocky Mountains over the south part of the Gulf States in 1881; in New York and Pennsylvania in 1886; and from Virginia and Maryland over Kentucky and central Tennessee in 1874.

YEARS OF LOWEST MEAN TEMPERATURE FOR JUNE.

At Portland, Me., Nantucket, Mass., Helena, Mont., Fort Sherman, Idaho, Carson City, Nev., Walla Walla, Spokane, Olympia, Fort Canby, and Fort Townsend, Wash., Portland, Roseburg, and Astoria, Oregon, the mean temperature for the current month was the lowest reported during the respective periods of observation. The lowest mean temperature for June was reported from Michigan and Wisconsin to east Texas in 1889; in the south Atlantic and east Gulf states and in the Sacramento Valley, California, in 1884; and from the lower lake region to the New Jersey and south New England coasts in 1881.

MAXIMUM TEMPERATURE.

At Nantucket, Mass., New London, Conn., Philadelphia, Pa., Moorhead and Saint Vincent, Minn., Valentine, Nebr., and Dodge City and Wichita, Kans., the maximum temperature for the current month was higher than previously reported for June.

The highest temperature reported for the current month by a regular station of the Weather Bureau was 111 at Yuma, Ariz., on the 7th. The temperature rose above 100 in the San Joaquin Valley, California, on the 4th, and in the Sacramento Valley, California, on the 30th. 100 and above was reached generally in Kansas, Oklahoma, and western Texas from the 21st to the 24th, and in South Dakota and adjoining parts of Minnesota and North Dakota on the 11th and 12th. The highest temperature of the month was noted generally in the Ohio Valley on the 19th, when the maximum values varied

from 91 to 94, and in the middle Atlantic and New England states on the 20th, when the temperature rose to 98 at Philadelphia, Pa., and Baltimore, Md. The lowest maximum temperature, 69, was reported at Eureka, Cal.; the maximum readings were below 80 on the extreme north Pacific coast and at San Diego, Cal., and the maximum values were below 90 over extreme northern New England, on the southeast New England coast, generally in the Lake region, over the middle and northern plateau and northern Rocky Mountain regions, and in the north Pacific coast states.

MINIMUM TEMPERATURE.

At Montrose, Colo., and Roseburg, Oregon, the minimum temperature for the current month was the lowest ever reported for June.

The lowest temperature reported by regular stations of the Weather Bureau was 32, at Lander, Wyo., on the 3d, and at Cheyenne, Wyo., on the 6th. Minimum temperature below 40 was noted in Upper Michigan, over the middle and northern Rocky Mountain and middle and northern plateau regions, and in the north Pacific coast states, except in the valley of the Columbia River. The highest minimum temperature, 71, was noted at Key West, Fla., and the minimum readings were above 60 along the south Atlantic coast and over the southern portions of the Gulf States and Texas.

RANGES OF TEMPERATURE.

The greatest daily range of temperature is shown in the table of miscellaneous meteorological data. The greatest monthly range of temperature, 61, was noted at Rapid City, S. Dak. From the Dakotas the monthly ranges decreased eastward to less than 40 on the south New England and middle Atlantic coasts, to less than 30 along the immediate south Atlantic coast and over the Florida Peninsula, to 18 at Key West, Fla., and to 20 at Galveston, Tex. The monthly ranges decreased westward to less than 30 at points on the immediate middle and north Pacific coasts, and to 22 at San Diego, Cal.

FROST.

Light frost was reported in northern New Hampshire and northern Vermont on the 8th, in Maine on the 17th, and at Taunton, Mass., on the 29th. Light frost was reported in central Ohio on the 7th and 8th, and in the interior and north portions of Lower Michigan on the 7th. Heavy frost on the 6th caused some damage about Cheyenne, Wyo. On the 10th and 18th heavy frost caused considerable damage about Jolon, Cal. Garden vegetation was damaged by frost about Snowville, Utah, on the 14th. Heavy frost killed tender vegetation at Show Low, Ariz., on the 16th. Light frost was noted at Roseburg, Oregon, the morning of the 19th. The observer reports that this was the latest frost ever noted at that station, and that the minimum temperature was the lowest on record for Roseburg for June. At Meadow Valley, Cal., garden vegetables were destroyed by heavy frost on the 19th. On the 22d tender vegetation about Lander, Wyo., was injured by frost. At Vernonia, Oregon, the temperature fell to 34 on the 29th, and heavy frost injured garden vegetables.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for June, 1893, as determined from reports of more than 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for

precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

In June the monthly precipitation is usually greatest over central and eastern portions of the Florida Peninsula, where